MASARYK UNIVERSITY

DEBLIN PRIMARY **SCHOOL**

THESSALONIKI
2010

SUSTAINABILITY IN PRACTICE:

educational project, Czech Republic

Alois Hynek
Bretislav Svozil
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Tomas Vagai

MAIN FEATURES OF THE PROJECT

Name of the Project	Sustainability in practice
Category	Multi-stakeholder involvement
Theme	Rural development, environment education, project training, sustainability and security
Target Group	School children, university students, rural community, general public, policy-makers, administrators, researchers
Area of Implementation	Rural area in Moravia/Czech Republic Deblin primary school

Project aims

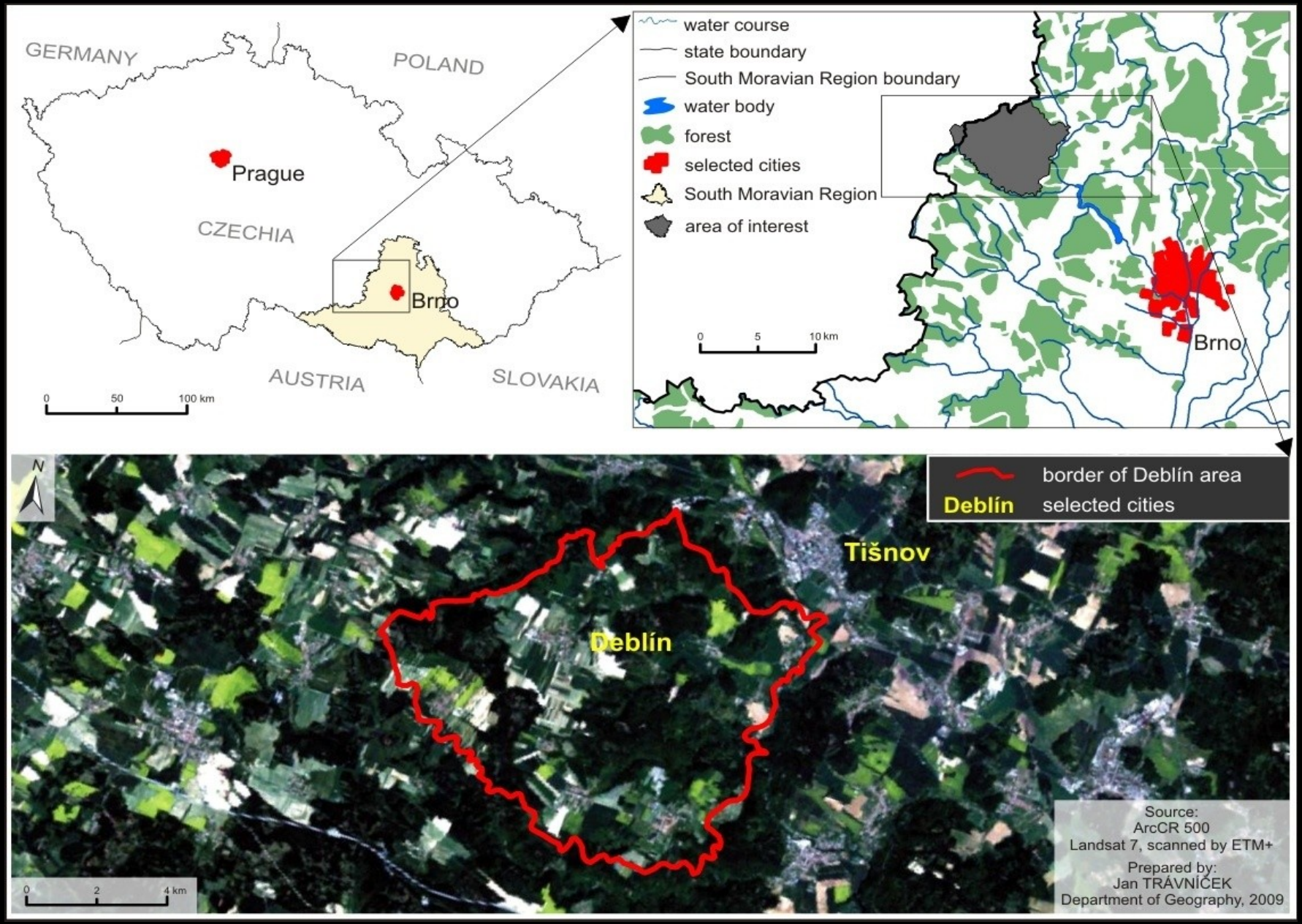
- **The main goal** is empowering the local community

„pupils/students and schools as mediators“

- **Other goals:**
  - social study of the town (talking to people, observing, participating, ethnography)
  - identification of community actors/actants, processes and desires
  - knowledge of social actions
  - problem solving issues (see further)

the politics of practising sustainability

Location the area



Geometrically transformed picture from the satellite in natural colours (RGB 3 2 1), May 24th 2001

Z0131 Course : Sustainability

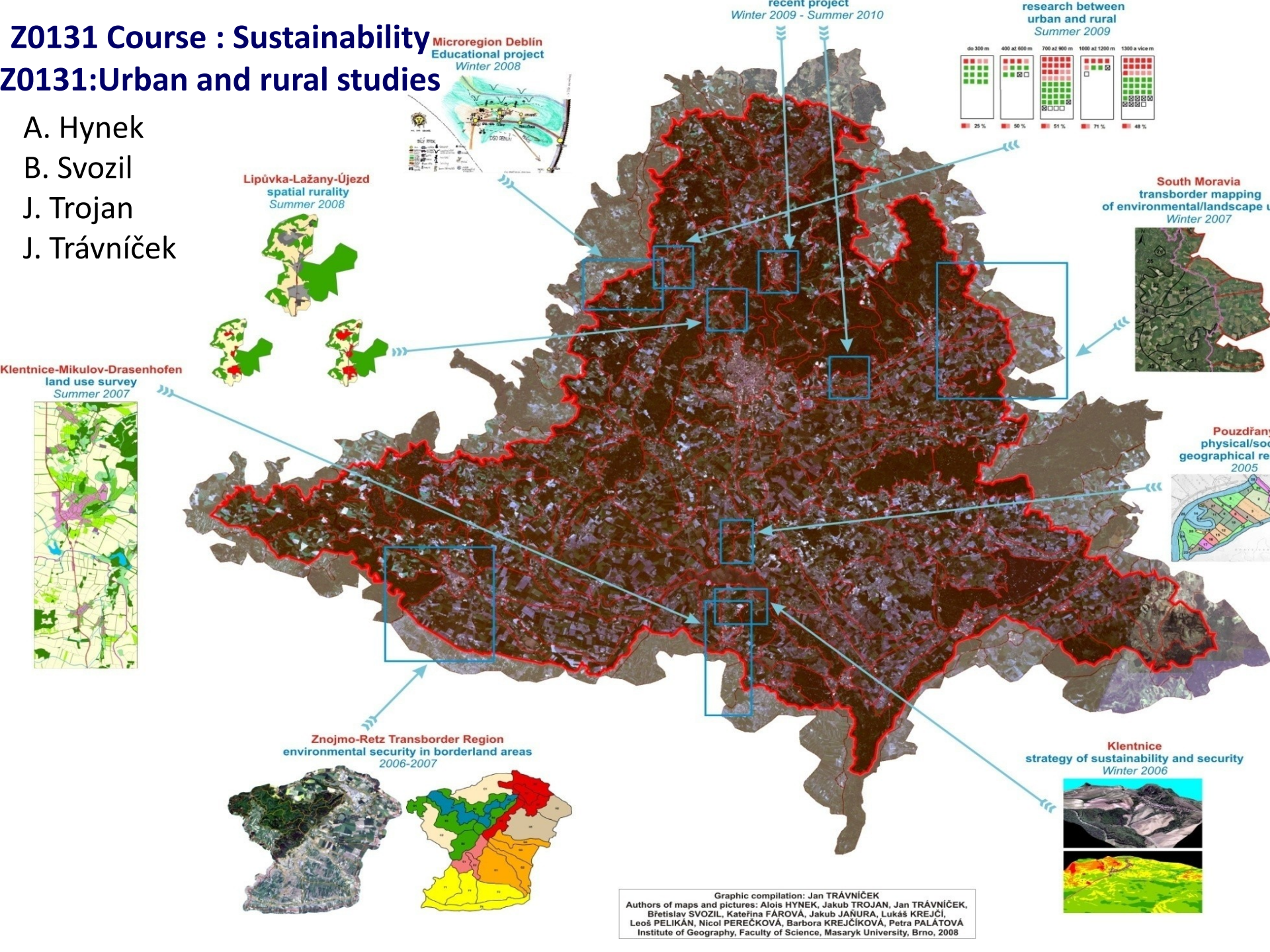
Z0131:Urban and rural studies

A. Hynek

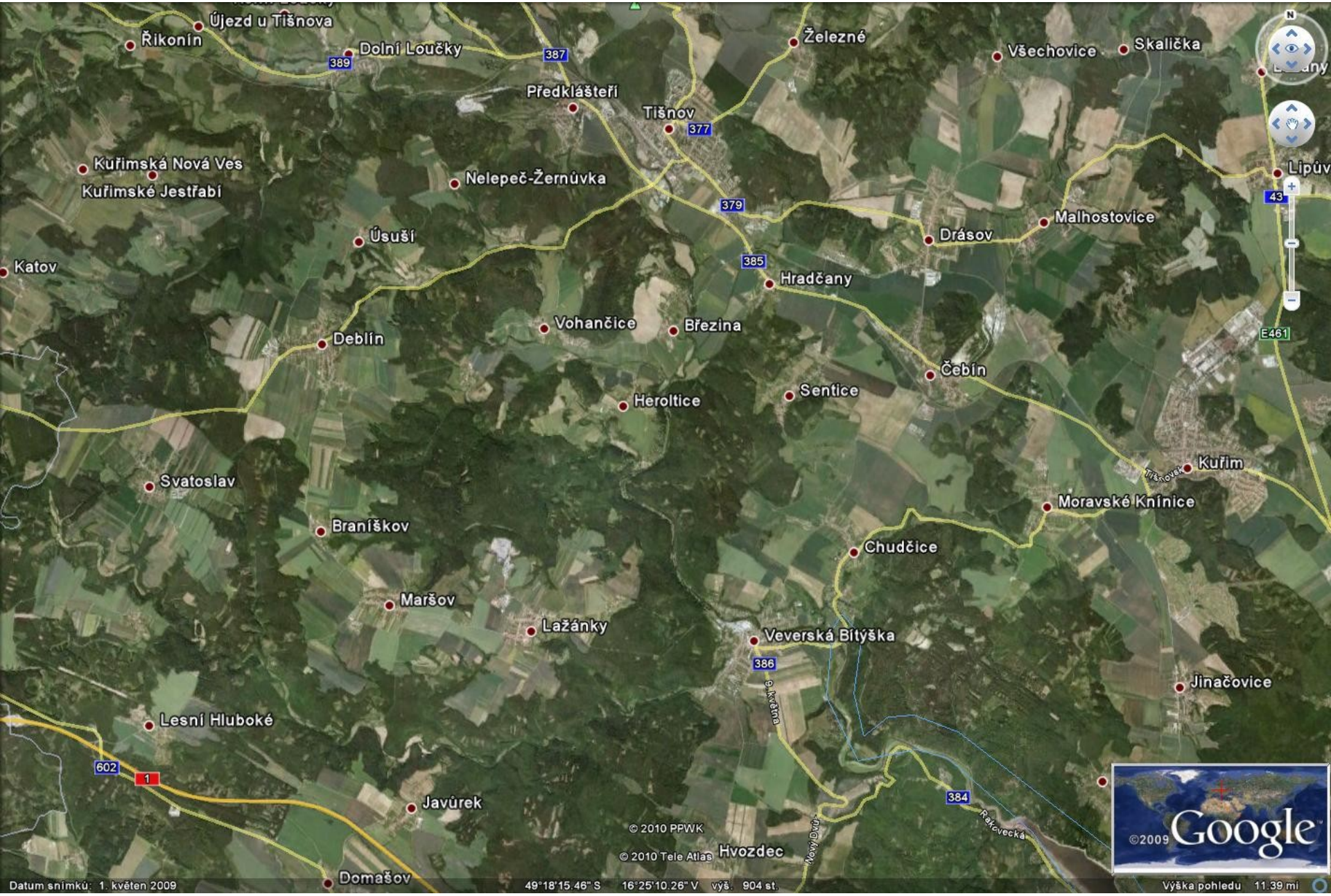
B. Svozil

J. Trojan

J. Trávníček

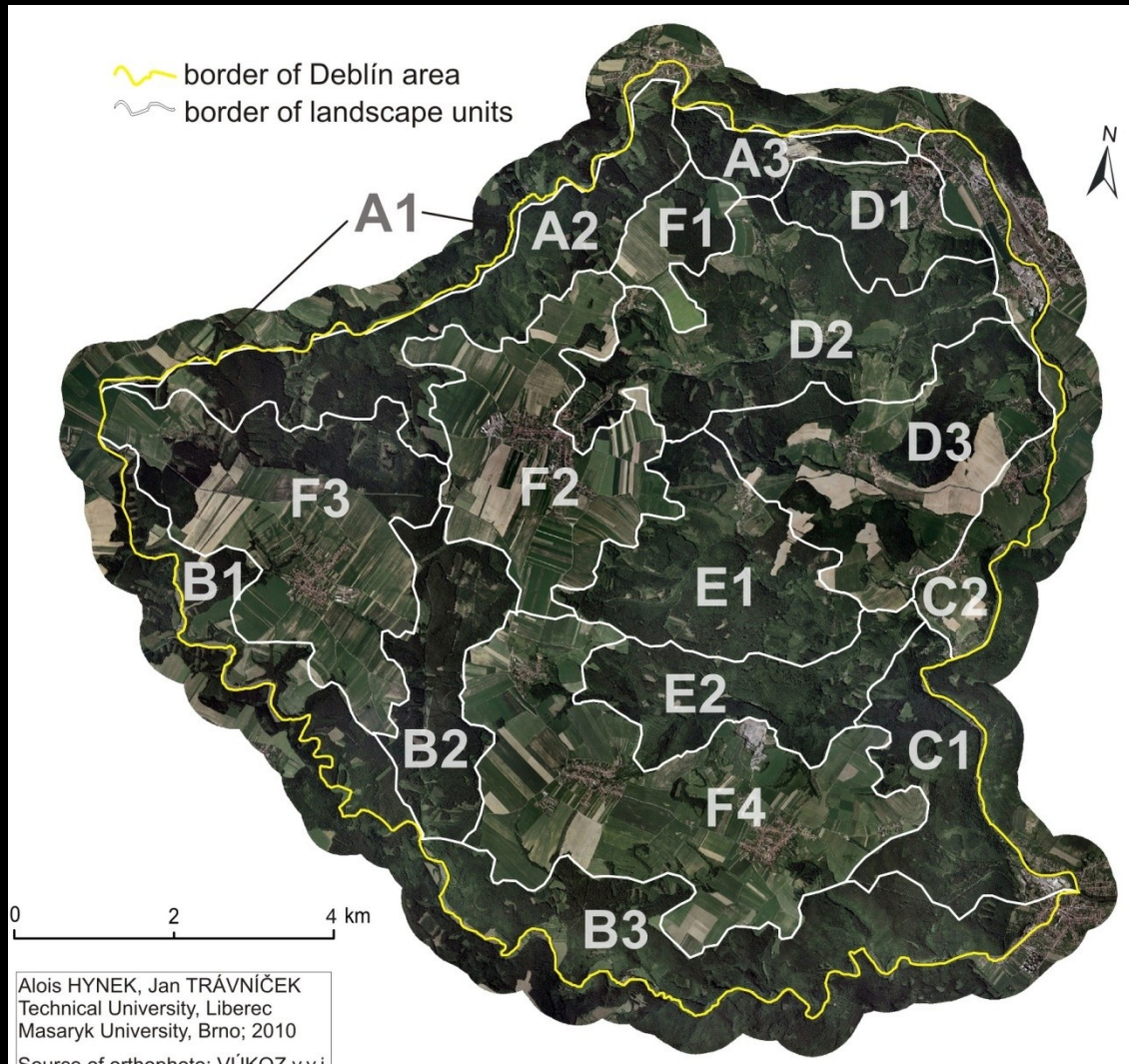


Graphic compilation: Jan TRÁVNÍČEK
Authors of maps and pictures: Alois HYNEK, Jakub TROJAN, Jan TRÁVNÍČEK, Břetislav SVOZIL, Kateřina FÁROVÁ, Jakub JAŇURA, Lukáš KREJČÍ, Leoš PELIKÁN, Nicol PEREČKOVÁ, Barbora KREJČÍKOVÁ, Petra PALÁTOVÁ
Institute of Geography, Faculty of Science, Masaryk University, Brno, 2008


Újezd u Tišnova
Řikonín
Dolní Loučky
389
387
Železné
Všechovice
Skalička
Předklášteří
Tišnov
377
Kuřimská Nová Ves
Kuřimské Jestřabí
Nelepeč-Žernůvka
379
Úsuší
Katov
385
Hradčany
Drásov
Malhostovice
Lipův
43
E461
Vohančice
Březina
Deblín
Čebín
Heroltice
Sentice
Svatoslav
Kuřim
Moravské Knínice
Braníškov
Chudčice
Maršov
Lažánky
Veverská Bítýška
386
Jinačovice
Lesní Hluboké
602
1
Javůrek
384
Hvozdec
© 2010 PPWK
© 2010 Tele Atlas
©2009 Google
Domašov
Datum snímků: 1. květen 2009
49°18'15.46" S 16°25'10.26" V výš. 904 st.
Výška pohledu 11.39 mi

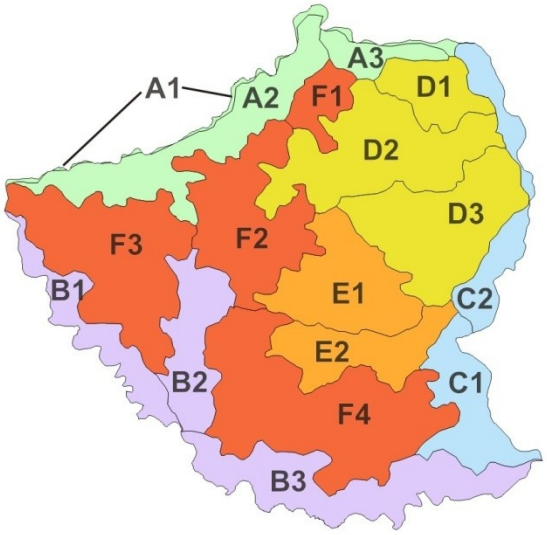
Composite landscape units of Deblín area (part 1)

version for local atlas for pupils in primary school



Alois HYNEK, Jan TRÁVNÍČEK
Technical University, Liberec
Masaryk University, Brno; 2010

Source of orthophoto: VÚKOZ v.v.i.



A1	Loučka-Libochovka-Blahoňůvka streams/floodplains
A2	Libochovka-Blahoňůvka valley slopes
A3	Loučka-river valley slope
B1	Upper Bílý potok-stream valley
B2	Podhorka-stream valley
B3	Lower Bílý potok-stream valley
C1	Svratka-river gorge
C2	Svratka-river valley bottom
D1	Předklášteří valley slope
D2	Závistka valley
D3	Vohančice steps and valleys
E1	Pejškov valley
E2	Maršov valley
F1	Pasník plateau
F2	Deblín plateau
F3	Svatoslav plateau
F4	Lažánky step-plateau

Composite landscape units of Deblín area (part 2)

	LF	RE	TC	HC	SC	SC	PV	AV	LU image	LU
A1		f *LSG*	⧫ ✳	D 0.3 2.1		F G	*Ufc*	meadows woods ruderal		forestry recreation
A2		d *GnGrPh*	⧫ ✳	SR 3-5		L C M	*Ft-bsakd*	forests		forestry recreation
A3		d *GnGr*	⧫ ✳	D 1.52		L C M	*QF-js* *FQ-b*	forests ruderal		forestry quarry
B1		d *GnPh*	⧫ ✳	D 0.15		L C F	*QF-sk* *FQ-kas*	forests ruderal		forestry agriculture
B2		d *GnGrPh*	⧫ ✳	D 0.05		L C F	*Ft-ikmo* *FQ-ask*	forests		forestry
B3		d *GnGrPh* *CoSa*	⧫ ✳	D 0.29		L C F	*QF-sbd* *FQ-ak* *CQ-cjz*	forests ruderal		forestry recreation
C1		d *GnGrCoSa* *MlLo*	⧫ ✳	D 6.63		L C F	*QF-skjb*	forests		forestry recreation
C2		vf *LSG*	£ 🡻	D 7.96		F V G	*FQ-s* *CQ-x* *QF-j*	agri-segetal ruderal		settlement transport
D1		s *GnArCoLo*	⇗ Ø	SR 2-3		M V L	*QF-sb* *Ft-b*	forests ruderal		forestry settlement
D2		dr *GnArCo* *GnMeLo*	⧫ ✳	D 0.05		M L E	*FQ-skb* *QF-sa* *Ft-d*	forests ruderal		rural
D3		dr *GnLiLo* *MaArCo*	⇗ Ø	D 0.05		M L F	*QF-sh* *FQ-kcb* *CQ-ca*	forests ruderal		rural
E1		dr *GnApArCo*	⧫ ✳	D 0.05		M L F	*QF-ksb* *Ft-bsd* *FQ-zcsk*	forests ruderal		rural
E2		dr *GnLi*	⧫ ✳	D 0.05		M L F	*QF-skabjd* *Ft-wbd*	forests ruderal		rural quarry
F1		p *GrGnPh*	⇆ ↑↑	SR 2-3		M P L	*QF-skb*	forests agri		rural
F2		p *PhGnDLS*	⇆ ↑↑	SR 2-3		V P M	*FQ-m* *QF-s* *Ft-s*	agri ruderal		rural centre
F3		p *GnPhQu*	⇆ ↑↑	SR 2-3		V P M	*Ft-hmksio* *QF-ks*	agri ruderal		rural
F4		t *GnMaDLS* *CoSa*	⇆ ↑↑	SR 2-3		V P M	*QF-ksdzb* *Ft-d*	agri ruderal		rural

Edaphic rows

a	stony
b	nutrient
c	drying
d	colluvial
e	eubasic
h	loamy
i	compaq
j	scree
k	acid
l	alluvial
m	oligobasic
o	pseudogleyed
s	fresh
t	tepid
w	fresh calcaric
x	erotherm
z	stunt

Rocks, earths

Ap	aplite
Ar	arkose
Co	conglomerate
D	deluvium
G	gravels
Gn	gneiss
Gr	granite
L	loams
Li	limestone
Lo	loess
Mb	marble
Me	metabasalt
Ml	marl
Ph	phyllite
Qu	quartzite
S	sands
Sa	sandstones

Potential forest vegetation tiers

CQ	Carpini querceta
FQ	Fagi querceta
QF	Querci fageta
Ft	Fageta typica
Ufc	Ulmi fraxineta carpini

Soils in soil cover

C	colluvisols
E	rendzinas
F	fluvisols
G	gleys
L	leptosols
M	cambisols
P	pseudogleys
V	luvisols

Columns in table

LF	landforms
TC	topoclimate
HC	hydrocycle
LU	land use
SC	soil dominated
PV	potential/reconstructed vegetation
AV	actual vegetation
RE	rocks, earths

Landforms

f	floodplains, valley floor
v	open wide valleys
s	steep step-like valley slopes
t	step-like rolling plateau
d	deep narrow valleys with steep slopes
r	ravines
p	rolling plateau

Topoclimate *(Quitt E., 1987)*

⇆ ↑↑	high thermal amplitude, airing, vapouring
⇗ Ø	moderate sunny slopes, catabatic
⧫ ✳	moist, longer snow cover
£ 🡻	inversions in depressions

Hydrocycle

D	discharge	in: $m^3.s^{-1}$
SR	specific run-off	in: $l.s^{-1}.km^{-2}$ (litres per a second and 1 sq. Km)

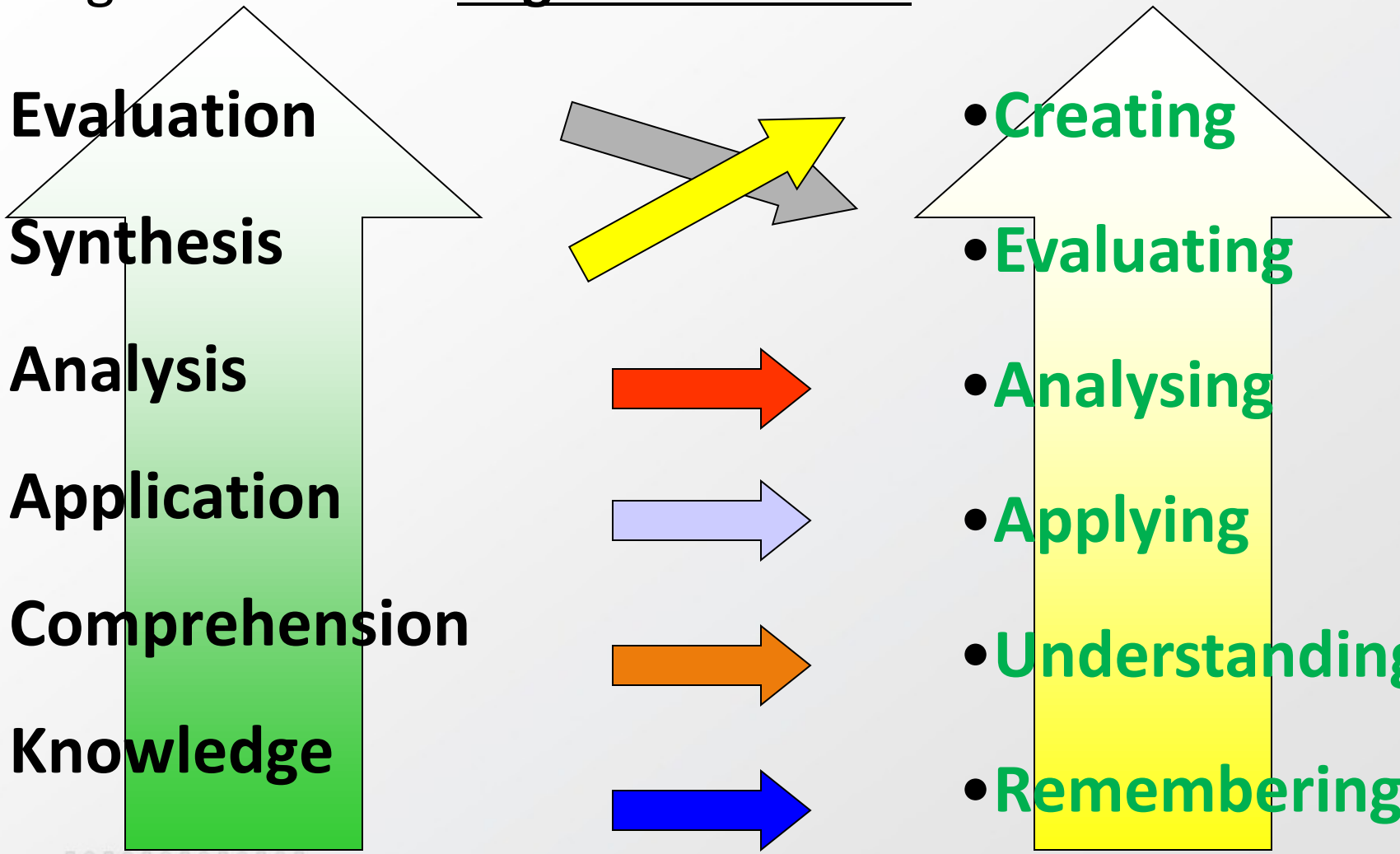
Introduction: local primary school as an equal partner for University?

- For universities involved in research
  - Primary school as a key clue into local community and source of specific local knowledge
- For municipalities and public administration
  - Primary schools as valid partner for governance and decision making
- For local community
  - Primary schools as important endegeneous actor and actant of local community life and development

B. Bloom (1956), revised 2001

Levels of intelectual behaviour in learning – a taxonomy with overlapping domains:

- Cognitive
- Psychomotor
- Affective



(Based on Pohl, 2000, ***Learning to Think, Thinking to Learn, p. 8***)

Project educational objectives

- Connected with key “sustainability” UN agenda + Millennium Ecosystem Assessment documents
- Improvement and reorientation of educational curricula documents towards sustainable development
- Cooperation of primary, tertirary education institutions with local community and government/authority
- Analysis of environment, knowledge-power relations and various spatialities of the cultural landscape of the Deblin area
- Evaluation the living conditions/livelihood in the Deblin area
- Empowerment of local communities in good governance and opening debate on the state of the environment is a starting point in searching for sustainable development

MASARYK UNIVERSITY

INOVACE VYSOKOŠKOLSKÉ VÝUKY V ENVIRONMENTÁLNÍCH OBORECH

K udržitelnému rozvoji
České republiky:
vytváření podmínek

Methodology

- inter/transdisciplinary cooperation of geographical and non-geographical approaches
- using both surface and deep data (Cloke, P. et al. 2004)
- using triangulation (Denzin, N. 1994), multiple methods
- Key-quality oriented ethnographical fieldwork/participatory approach: in the sense of „thick description" (Geertz, C. 2000) ….do not study in villages, study villages

1) Roles change
– foreigner/true observer x true participant (participation in the community life)

2) Insight into the role of power – permeanting power/resistance

3) Revealing the internal networks – actors in networking
– formal and informal powers over a particular site

Constructing data

superficial and deep data/extensive-intensive/thin-thick description

(*Cloke, P., Cook, I., Crang, P., Goodwin, M., Painter, J., Philo, C., 2004* **)**

field survey

participant observation

multiple method

Field survey
Understanding interview
Mental maps
Focus groups

Personal archives
Talking to people/actors
Official/non-official sources
Imaginative sources

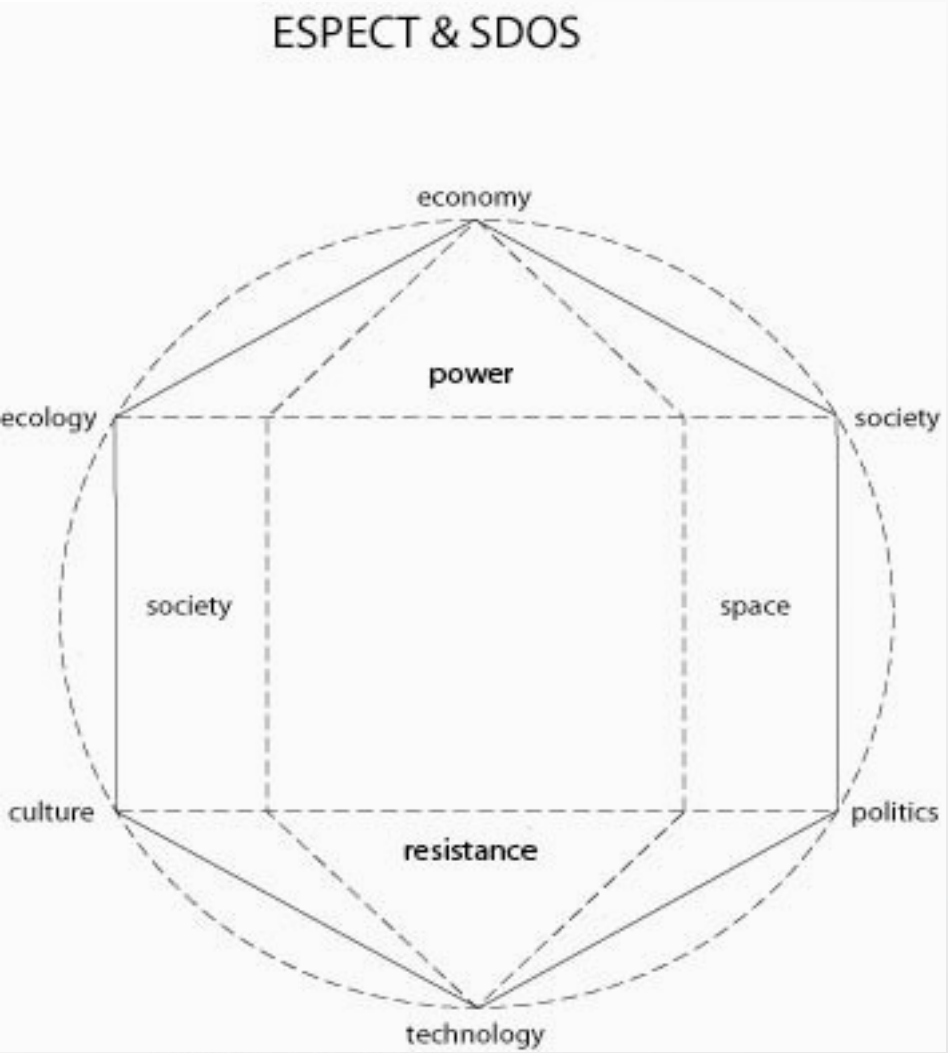
Interpreting data

(*Cloke, P., Cook, I., Crang, P., Goodwin, M., Painter, J., Philo, C., 2004*)

- sifting and sorting
- enumerating
- explaining
- understanding
  - the critic/artisan/ethnographer/ iconographer/conversationalist/therapist/ deconstructionist
- representing

Methodological approaches to sustainability

(Hynek A., Hynek N. 2007, MA 2002-2009)

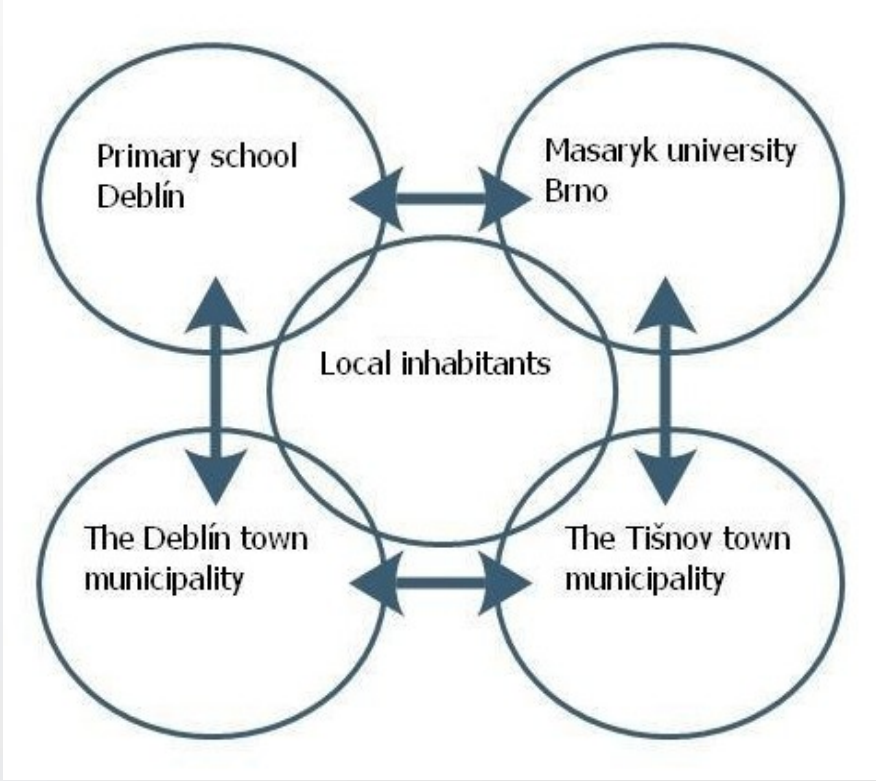


Millennium Ecosystem Assessment (MA)

- Ecosystem as capital
- Knowledge synthesis
- Impacts of ecosystems changes
- Field+lab technologies (GIS)
- Global/national/local
- Endogenous / exogenous powers
- asset, stock, yield, income

Actors in contemporary cooperation

- Interdisciplinary cooperation
  - Masaryk university, Brno
  - Technical university, Liberec
  - Palacký university, Olomouc
  - Primary school Deblín
  - The Deblín town municipality
  - The Tišnov town municipality
  - Local inhabitants



Central position of local people

Analysis of actors and actants

Shareholders	Local government, MÚ Tišnov, SDH Deblín, farmers, TJ Sokol Deblín, chronicler, director of primary school, private entrepreneurs, hunters
Stakeholders	local residents, firemen, football players, students, schools, farmers, tourists, hunters
Decision-makers	Local government,Microregion of Deblín, MÚ Tišnov (Especially the Department of Environment and Planning and Building Authority), Regional Office of JMK, representatives of the South Moravia Region, Director of Forests of the City of Brno, Head of School
Experts outside	Ass. Prof. Lacina
Experts inside	Witnesses / locals, Mr. Neshyba, Mrs. Antlová, Mr. Štěrba, Mr. Habart
Actants objects	collective farm granary, an amplifier (transmitter), bus stops, Municipal House, a supermarket, building schools, lake, church, cemetery, kindergarten, cycling ways
Communities	SDH Deblín, TJ Sokol Deblín, Sokol Deblín – football and tennis, section, farmers, the Christian community, association of Deblín Hunters, fishing club

Source: Hynek a Svozil 2007 (pro potřeby předmětu Trvalá udržitelnost – Sustainability)

Development of project activities

- Mental mapping as unique personal interpretation/presentation of the reality, used on a daily basis for spatial mobility and orientation, evaluated and improved continually
- Definition of the area linked to the results of mental mapping
- Collecting available data and participative/understanding interviews with major actors
- The profile of the Deblín area
- List of major problem issues connected to SLE (significant landscape elements)
- Students' and pupils' public meetings in the Deblín primary school premises and joint field work, empowering the people
- Creating outputs and public presentation of the results
- Joint field excursions/expeditions and identification of themes expected by the public/local community or government /authority – governance

Community learning as significant part of the case study project

- identification of key actors/actants in community
- community networks
- power inside and outside of community
  - land use
    - owners, users, labourers, visitors……..percepts and affects
- sustainability/security x priority for the community
- debate with representatives of the local community and local authorities
- main development problem areas and proposed solutions
  - analysis, interpretation, synthesis, evaluation, proposition (LANDEP)

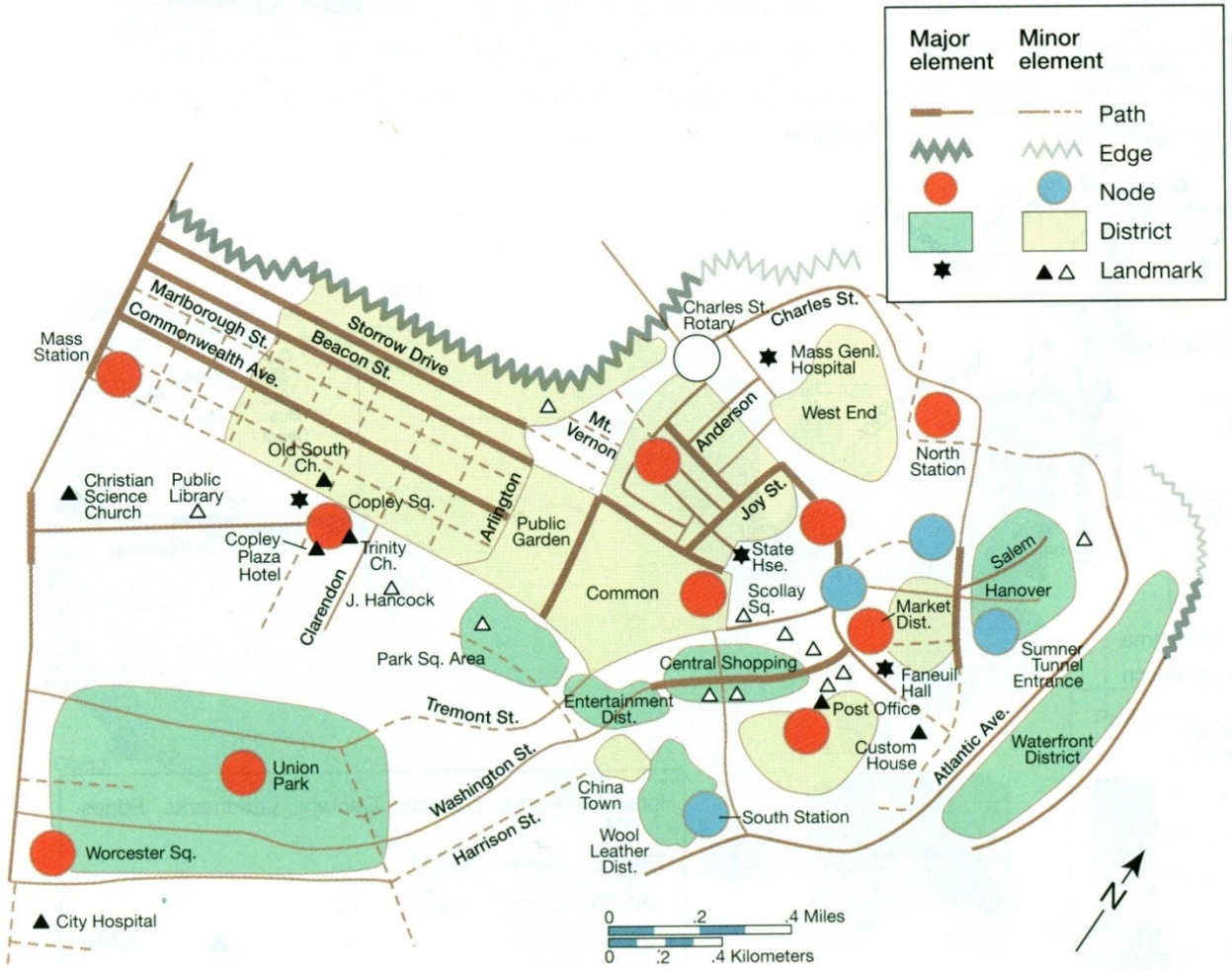
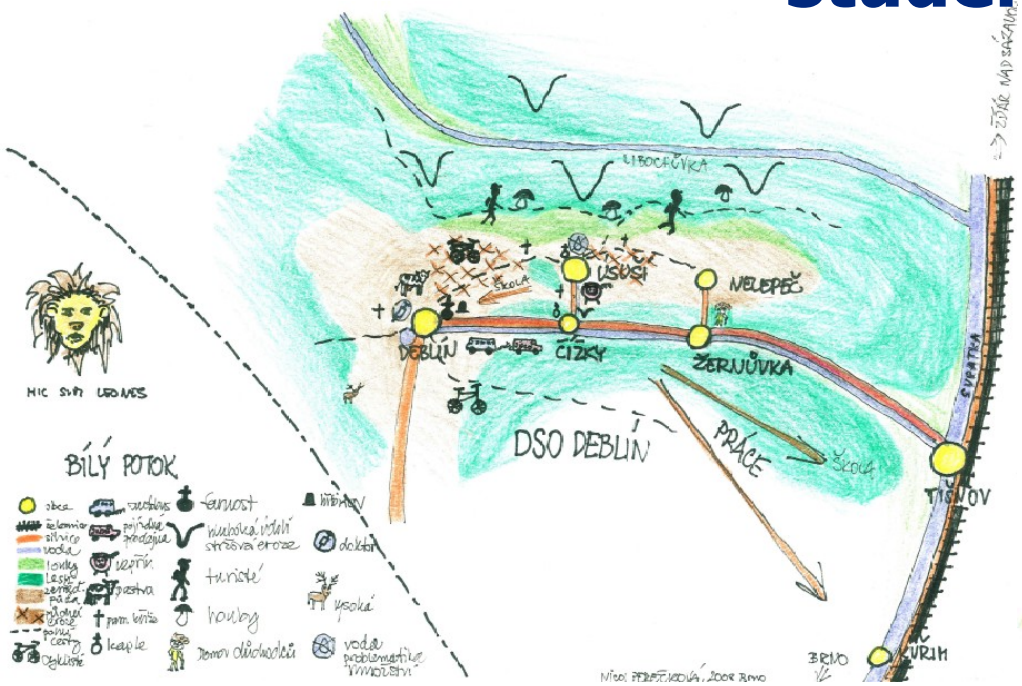


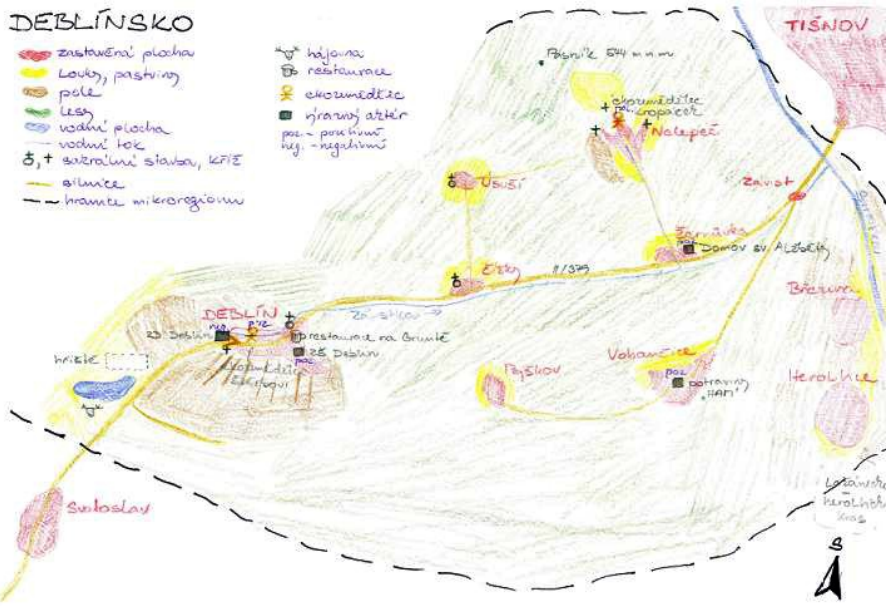
Figure 6.6 Cognitive image of Boston This map was compiled by Kevin Lynch, one of the pioneer researchers into cognitive images, from interviews with a sample of Boston residents. Lynch found that the residents of Boston tended to structure their cognitive images of the city with the same elements. He produced ingenious maps, such as this one, to demonstrate the collective "mental map" of the city, using symbols of different boldness or color to indicate the proportion of respondents who had mentioned each element. (After K. Lynch, *The Image of the City*. Cambridge, MA: M.I.T. Press, 1960, p. 146.)

Mental mapping – perspective from primary school pupils

1. HOŘÍNKOVI
2. KOTRNCOVI
3. TEJKALI
4. HORÁKOVI
5. ŠKOLNÍKOVI
6. STAŇKOVI
7. ZAVŘELOVI
8. SOJKOVI
9. ŠTOČKOVI
10. MAŠKOVI
11. SKAINHAUSROVÁ
12. SÁBLÍKOVI
13. SOUKUPOVI
14. SOJKOVI
15. SOJKOVI
16. SOJKOVI
17. ŠPAČKOVI
18. MAŠKOVI

Mental mapping – perspective from university students





Primary school pupils Deblin **x** **university students MU Brno**

detailed maps **x** **using generalization**

real **x** **mediated reality**

stereotypes **x** **„objective“ perception**

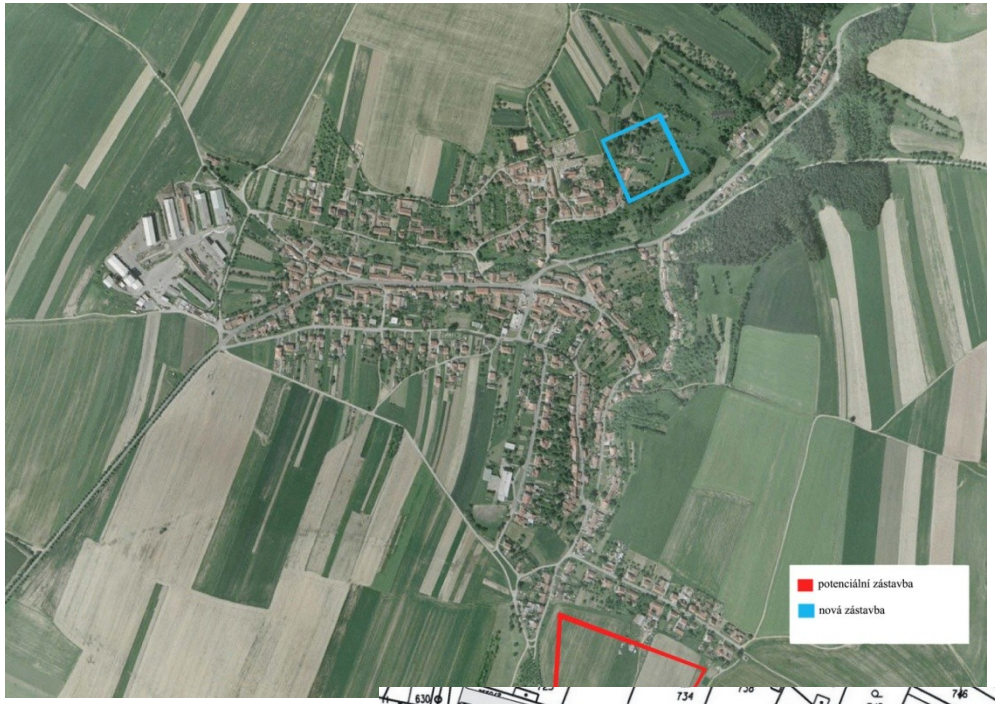
not linked with greater area **x** **patterns and connections**

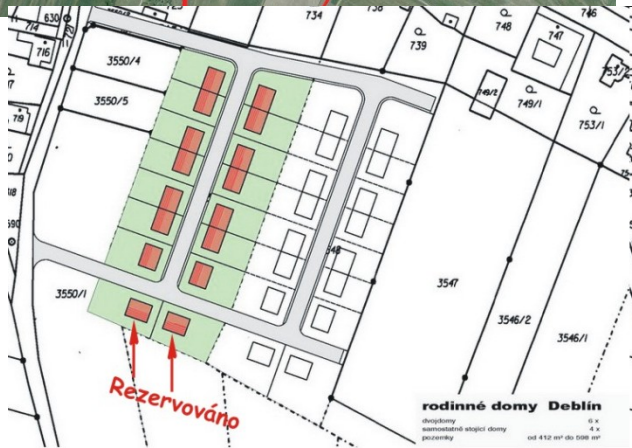
Deblin community

„Deblin area becomes a popular location …“

Are there enought water for citizens?…“

Obr. 3: Nová a potenciální zástavba

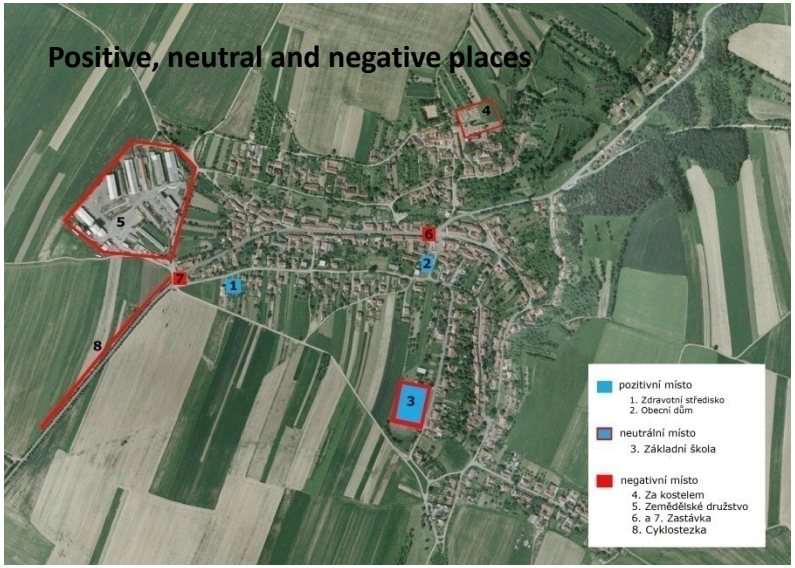




View of new residents		**Conservatives**
- Clean environment,		- ´new peasants´, strong identity
- Good location,	X	- city services,
- Basic services,		- building new houses in the family,
- Good land parcel prices.		- obsolote building

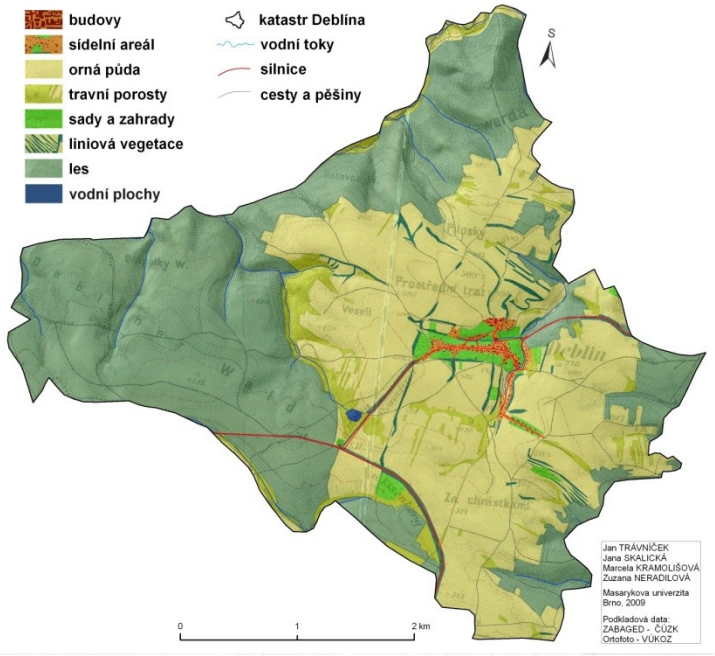
Examples of primary school pupils work

GENERACE	SEKTORY NÁRODNÍHO HOSPODÁŘSTVÍ				NEJČASTĚJŠÍ POVOLÁNÍ
	PRIMÉR	SEKUNDÉR	TERCIÉR	KVARTÉR	
1. generace	70%	17%	10%	3%	JZD
2. generace	45%	35%	20%	0%	JZD
3. generace	6%	45%	39%	10%	svářeč
naše generace (žáci ZŠ)	7%	40%	46%	7%	obráběč kovu

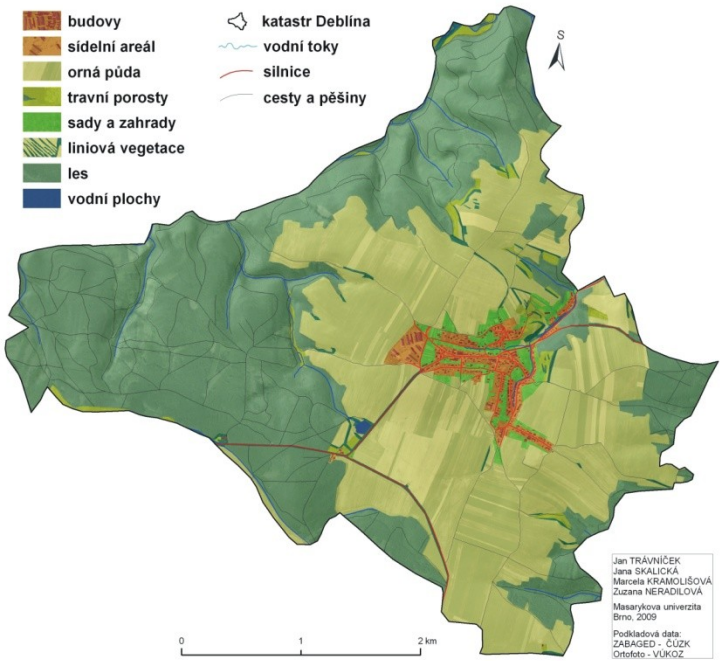


Delimitation of „new village center“

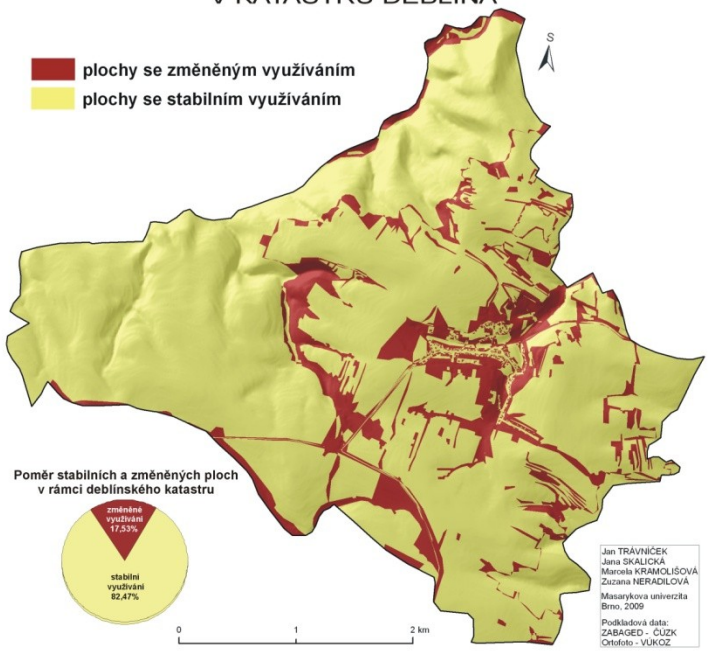
LAND USE V KATASTRU DEBLÍNA V ROCE 1876



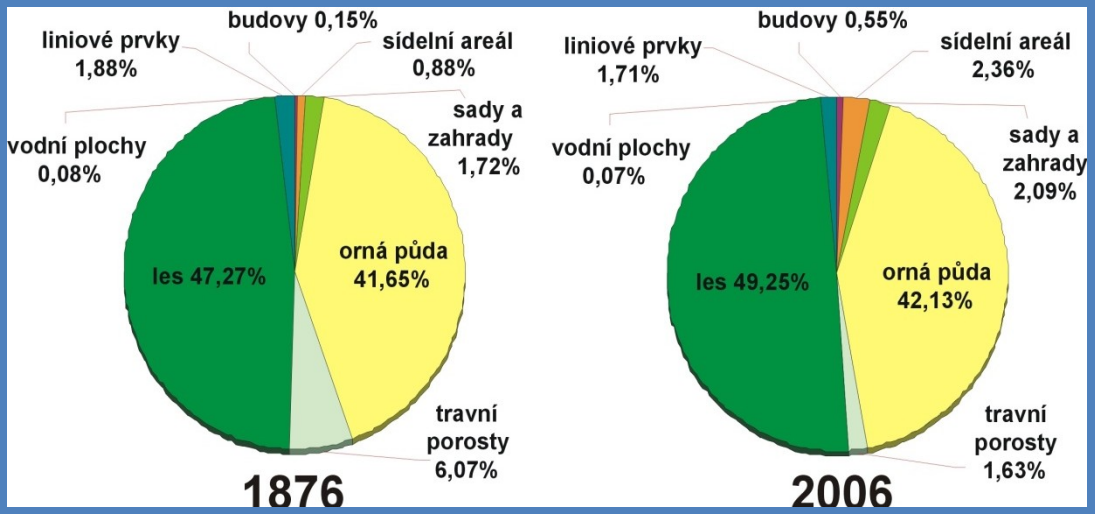
LAND USE V KATASTRU DEBLÍNA V ROCE 2008



PLOCHY SE STABILNÍM A ZMĚNĚNÝM VYUŽÍVÁNÍM V KATASTRU DEBLÍNA



Land use parcels in Deblin cadastre



A.Hynek, Svozil, B., Trávníček, J., Trojan, J.: Trvalá udržitelnost ´Deblínska´, 2009

Significant landscape elements (SLE)

in the frame of territorial system of ecological stability (Buček,Lacina)

- „Ecological, geomorphological or aesthetic value of landscape shaping its appearance and / or contributing to its stability“ (Act 114/1992)
- Decision maker of SLE is legislatively ambivalent
  - Which gives the chance for creativity and participation
- Potential/capital of SLE as actant (in the sense of Latour, 2005)
  - ecological stability, biodiversity, aesthetic value **(the "biological" function)**
  - reducing water and wind erosion **(the "protective" function)**
  - relicts of historical landscape structures **(the "historical" function)**
- Creating the relationship between pupils and the town landscape
  - examination of the SLE (cognitive level)
  - management of the SLE (landscape and community actors/actants)
  - SLE usage (eg for sustainable tourism)

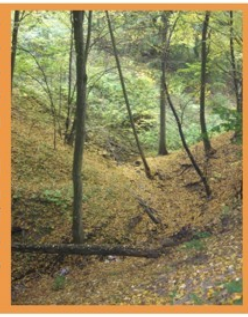
CURRENT RISKS IN RELATION TO SUSTAINABLE PERSPECTIVE ON WATER

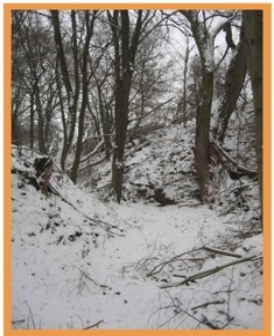
POTENCIÁLNÍ RIZIKOVOST DEBLÍNSKA VE VZTAHU K TRVALE UDRŽITELNÉMU POHLEDU NA VODU K ROKU 2008

Nevhodné zapojení vodního toku do intravilánu a stav jeho koryta má nejen nízké estetické kvality, ale nese s sebou problémy rychlého odtoku vody z území a nedostatečné přirozené filtrace vody.

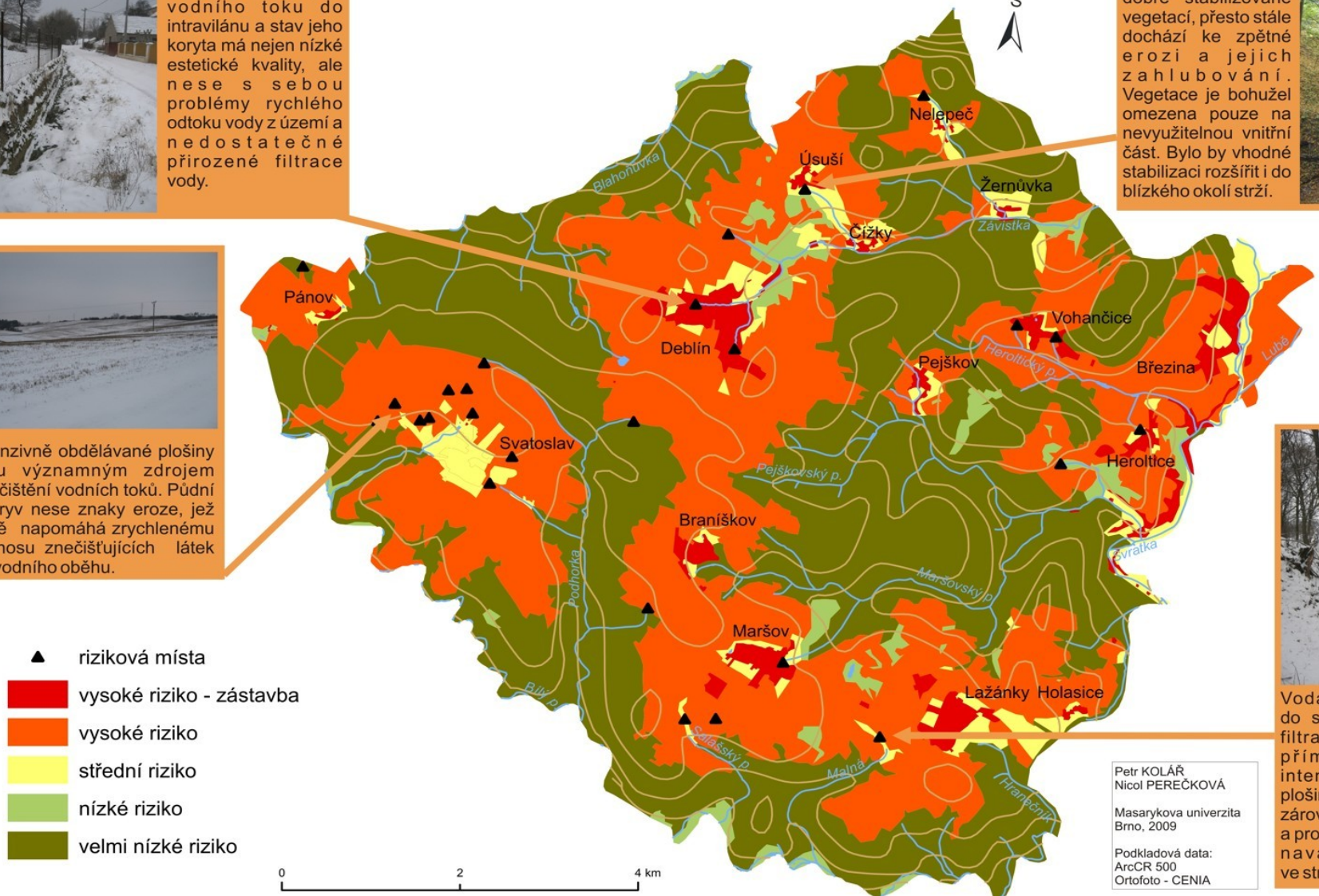
Intenzivně obdělávané plošiny jsou významným zdrojem znečištění vodních toků. Půdní pokryv nese znaky eroze, jež silně napomáhá zrychlenému přenosu znečišťujících látek do vodního oběhu.

Ačkoli jsou strže dobře stabilizované vegetací, přesto stále dochází ke zpětné erozi a jejich zahlubování. Vegetace je bohužel omezena pouze na nevyužitelnou vnitřní část. Bylo by vhodné stabilizaci rozšířit i do blízkého okolí strží.





Voda dostávající se do strží nemá možnost filtrace, jelikož strže přímo navazují na intenzivně využívané plošiny. Stržovou erozí je zároveň odtok urychlen a problematické jsou také navážky a skládky ve stržích vznikající.



Petr KOLÁŘ
Nicol PEREČKOVÁ

Masarykova univerzita
Brno, 2009

Podkladová data:
ArcCR 500
Ortofoto - CENIA

Blahoňůvka: reduce the proportion of spruce monocultures in otherwise appropriate composition of riverside vegetation (alder, ash, maple).

significant landscape component

Deblin cadastre

water stream

N

Úsušský remízek: general clean up, remove the brambles.

Strejčkov: strengthen the dam pond bottom, remove the remnants of wire fence and increase the proportion of oak and fir.

Mokřad: cut an adjacent meadow species composition and improve wetland.

Suchá loučka: cut a meadow, improve the condition of the bush line vegetation, extend SLC.

0 1 2 km

Jan TRÁVNÍČEK
Barbora KREJČÍKOVÁ
Martin BRAUN
Ondřej ŠERÝ

Masaryk University
Brno, 2010

Source of Orthophoto:
VÚKOZ, v.v.i.

SLE deployment in the land of Deblín, graphical solution suitable for popularization through lectures and instructional signs

Financing the future

- Activities supported through projects financed by structural funds (EU – Operational Programme Education for Competitiveness)
- 2 key projects
  - Sustainability as part of school educational programme
    - Atlas and local geographical textbooks
    - Supports for students (ICT, e-learning)
  - Empowering language skills through environmental education
- Other projects where Primary school Deblin

plays the „partner role“

SUMMARY of current results

The activity helped pupils to interest local residents about their neighborhood resident and encourages them to actively engage in the project.

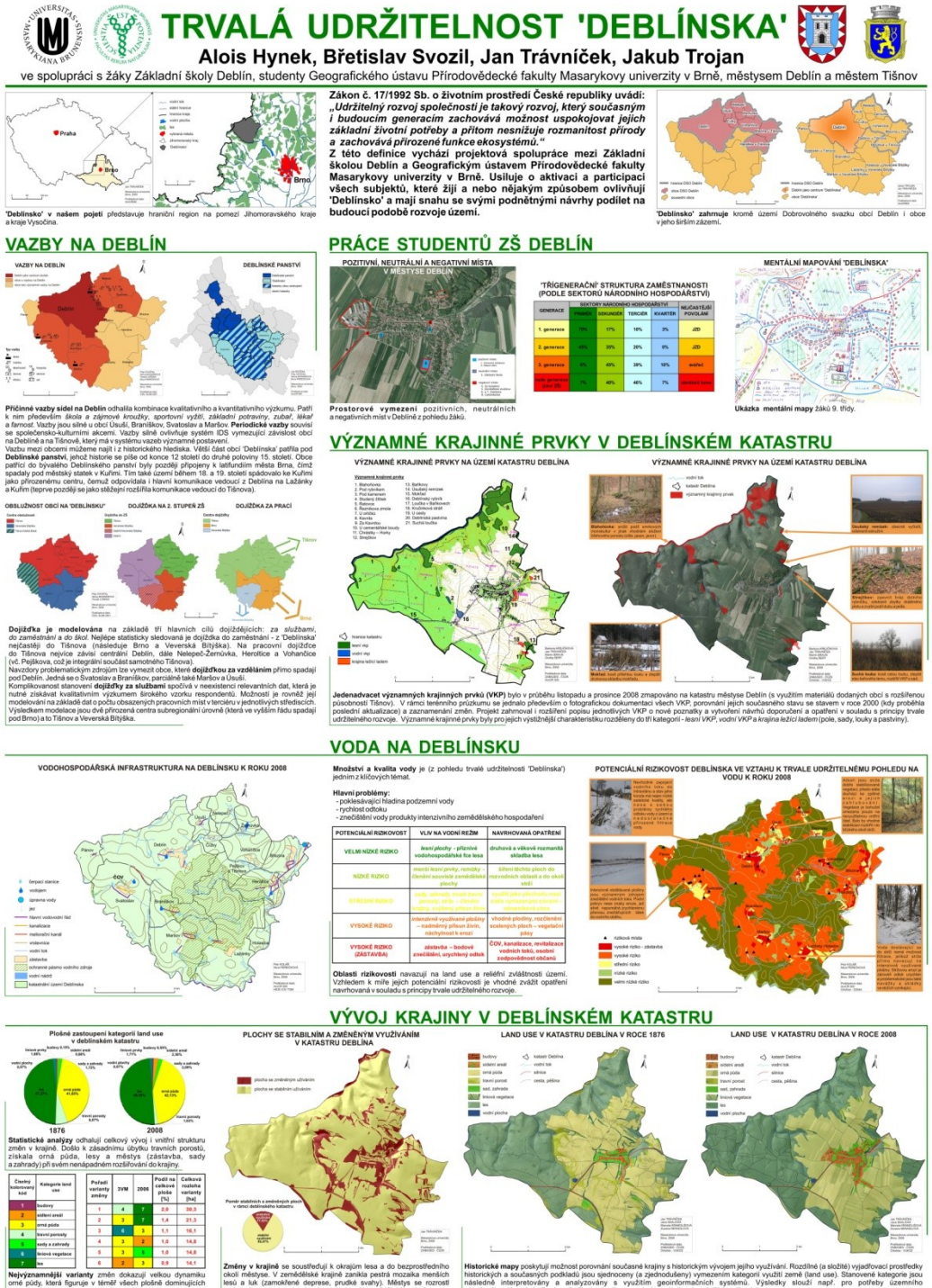
PUBLIC PRESENTATION OF RESULTS

Results discussed with representatives of public administration and local authorities to take account of them in practice.

Cooperation still continues...

- **Vohančice** (water management issues)
- **SLE excursion**
- **Grants and funds support**
- **Informational boards in woods**
- **SLE management in cooperation with Municipality of Tišnov**
- **Implementation into curricular documents at Primary school Deblín**
- **Best practice preparation with participation of Ch. Schrefel - 17&4 Organisationsberatung GmbH**

2010: Actors meeting – local Agenda creation?



OUTPUTS PRESENTATION

- Evaluation and feedback
- High participation

COOPERATION CONTINUES...

- Operational Programme
- Vohančice
- Excursion for pupils
- Atlas of Deblín region
- Actors meeting
- Information tables
- SLE management

Thank you for attention